

Mentoring in the Biomedical Sciences: What is the definition of success?

National Institutes of Health

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RISING ABOVE THE GATHERING STORM

*Energizing and
Employing America
for a Brighter
Economic Future*

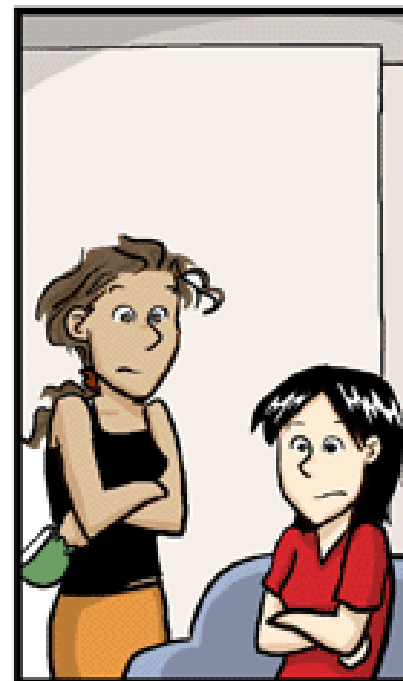
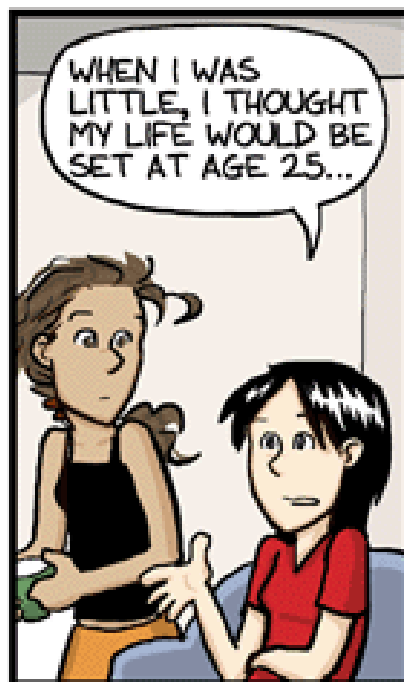
NATIONAL ACADEMY OF SCIENCES,
NATIONAL ACADEMY OF ENGINEERING, AND

What is independence?

Median age at first job— 38 years

Median age at first R01— 42 years!

% NIH awards to new people— 4%



Career Development of Female Scientists in the Pharmaceutical Industry: Past vs Present

Today's Environment

**To Succeed Must fully leverage the talents
of a diverse workforce**

**To operate within a diverse
marketplace**

Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering

**The National Academies
September 18, 2006**

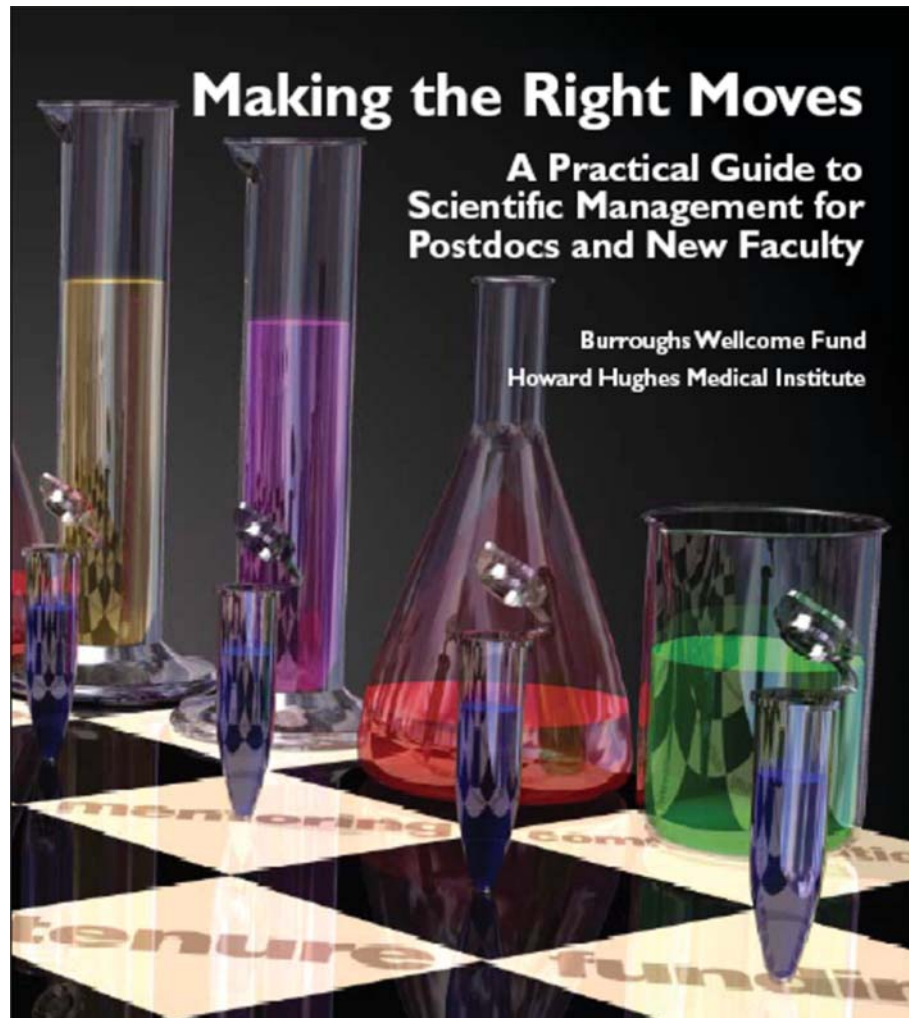


Industry vs Academia

- **Constant peer review and immediate feedback on job performance**
- **Objective performance measures**
- **Developmental plans monitored quarterly**
- **Mentoring**
- **Succession planning**
- **Human capital is greatest asset/Assessment of recruitment and retention rates**
- **Proactive and aggressive role of HR in oversight**
- **Team vs individual performance = success**
- **Constant motivation is a challenge (public perception of industry; long development time & high failure rate in drug discovery)**

Lilly Specific Programs

- Women's Network
- On site child care
- Generous maternity leave
- Job sharing
- Flex time
- Remote sites
- VP Diversity 06



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Traits of a Good Mentor

- **Accessibility**
- **Empathy**
- **Open-mindedness**
- **Consistency**
- **Patience**
- **Honesty**
- **Savvy**
- **Humility*****

Strategies for Effective Mentoring

- **Make everything a learning opportunity**
- **Set specific goals and measures of accomplishment**
- **Encourage strategic thinking and creativity**
- **Uphold professional standards**
- **Impart skills**
- **Provide networking opportunities**
- **Give moral support**

How to Get the Mentoring You Need

- **Don't let go of your old mentors**
- **Establish a relationship with a set of official mentors**
- **Seek out informal mentors**
- **Establish a set of confidants**
- **Meet regularly with formal mentors**
- **Keep meetings professional**

How to be Mentored Well

- **Foresight**
- **Proactivity**
- **Probing**
- **Respect**
- **Gratitude**
- **Reciprocation**
- **Humility*** (accept critical feedback)**

Improving the Postdoctoral Experience: An Empirical Approach



Geoff Davis

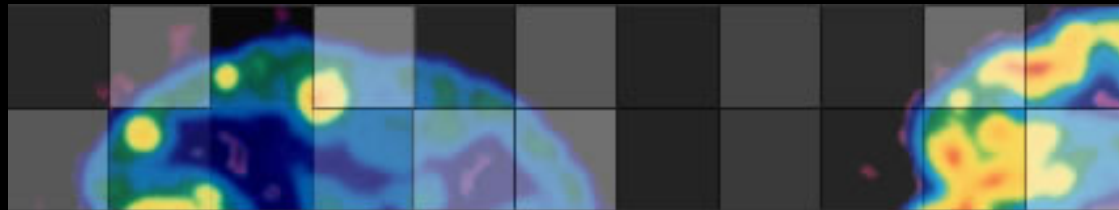
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What Works?

- Changes have costs (money, time)
 - Do benefits justify investments?
 - What should priorities be?
 - What gives the biggest bang for the buck?
- These are empirical questions



Sigma Xi Postdoc Survey

- Ran a big web survey
- Contacted 22,400 postdocs at 47 institutions
 - ~40% of all postdocs in US
- Heard back from ~8,000
 - Overall response rate: 38%



Partner Organizations



- National Postdoc Association



- *Science's* Next Wave



- NBER/Sloan Scientific Workforce Group

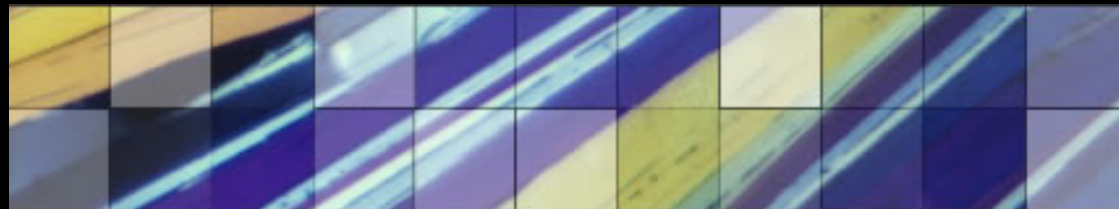
Our “Experiment”

- Postdoc administration takes place largely at the level of the PI
 - Tremendous variability in conditions from lab to lab
 - Recent, limited introduction of new practices
- Natural experiment
 - Ask postdocs about their working conditions
 - Ask about how well they are doing
 - Find conditions associated with positive outcomes



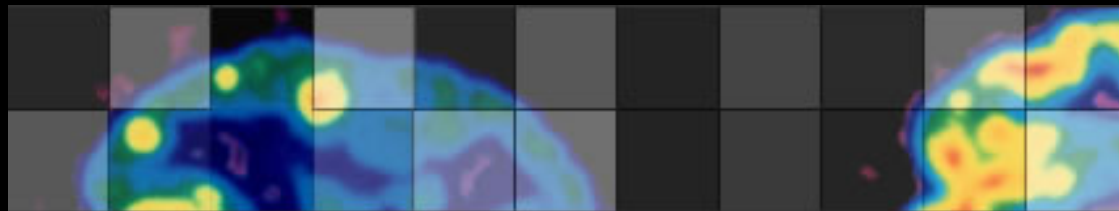
4 Outcome Measures

- Subjective success: overall satisfaction
- Advisor relations: is PI doing a good job?
- Conflicts: any postdoc/PI conflicts?
- Productivity: journal papers submitted



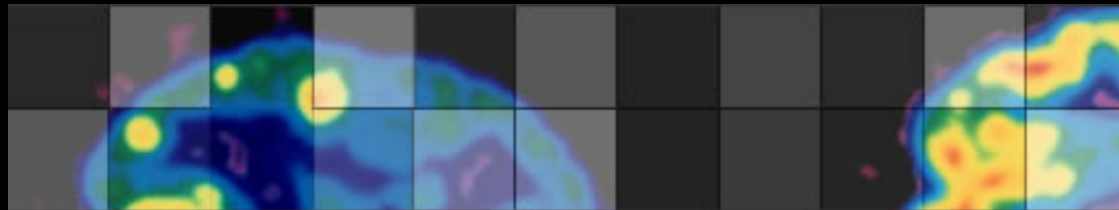
Take Home Message #1

- Structured oversight, professional development make a *big* difference



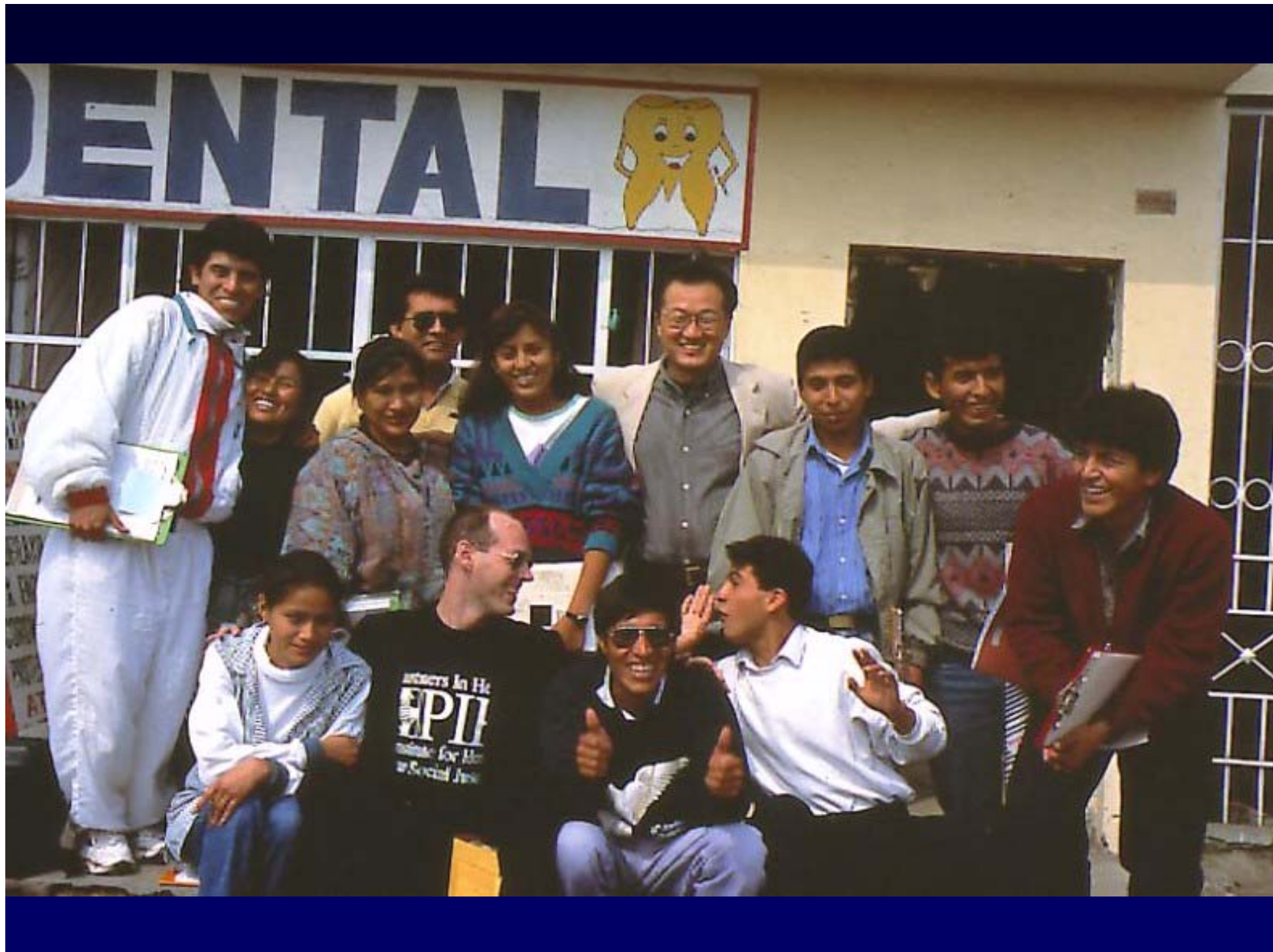
Take Home Message #2

- Plans make a *big* difference



Corporate Social Responsibility

A Case for Mentors and Networks



November, 1997

- phone call from Howard Hiatt, PIH mentor, to Al Gilman, member Lilly Board of Directors
- phone call from Al to Randy Tobias, Lilly CEO
- phone call Tobias to GHC

Spring, 1998

- Jim Kim and Howard Hiatt visit Lilly
- Lilly commits to PIH Peru Project

Summer, 2003

- Lilly commits \$70million and ultimately \$135 million becoming the largest philanthropic effort in the company's history

Background

- ◆ **PIH (Socios en Salud) working in slum in N. Lima**
- ◆ **1992: US-PIH worker returns to Boston and dies of MDR-TB**
 - TB resistant to at least INH and RIF
- ◆ **Investigation of treatment failures reveals 16% prevalence of MDR in Peru**
- ◆ **1996: Treatment begun in cooperation with the NTP using drug testing from Mass. State Laboratory**



Era of Translational Science

- **Policy makers, legislators, and educators looking for “evidence-based” practice**
- **Motivated educators, policy makers, and the public are the end users of scientific research, i.e. “consumers”**
- **Scientists should listen to the practical questions generated by these, “consumers”.**
- **Real dialogue starts when we address misperceptions and misunderstandings across research/practice divide.**
- **End goal is policy informed by the best science and evidence-based practice and a citizenry well-educated in science**

Social Responsibility of Scientists

Scientists must take a more proactive role in communicating the benefits of science to society and in translating science into policy. Mentors must make this a high priority!

Keys to Success

- It is important to have career goals but it's equally important to be open to opportunities. Follow your instincts.
- Do something everyday that scares you, whether that means making a phone call or meeting with someone you find intimidating.
- Success is about adding unique value to whatever you do.
- There is no substitute for tenaciousness and perseverance.

Definition of Success

“One of my favorite quotes comes from the book ‘Good to Great’ by Jim Collins: ‘The kind of commitment I find most among the best performers across virtually every field is a single-minded passion for what they do, an unwavering desire for excellence in the way they think and the way they work.’ I think that’s a pretty good definition of success.”....Angela Braly, President and CEO WellPoint Inc.

QUESTIONS?